

CLAIMS

1. A method for brightening virgin mechanical pulp; said method comprising combining: (i) an aqueous solution comprising sodium borohydride and sodium hydroxide; and (ii) an aqueous solution comprising sodium bisulfite, in a chemical mixer and adding output of the chemical mixer to an aqueous slurry of virgin mechanical pulp;
wherein a ratio of (moles bisulfite – moles hydroxide)/moles borohydride is from 0 to 7.8.
2. The method of claim 1 in which said ratio is from 4 to 7.5.
3. The method of claim 2 in which the output of the chemical mixer is added to the pulp slurry within 12 hours of mixing.
4. The method of claim 3 in which said ratio is from 5 to 7.
5. The method of claim 4 in which the output of the chemical mixer is added to the pulp slurry within 3 hours of mixing.
6. The method of claim 5 in which the output of the chemical mixer is substantially homogeneous prior to addition to the pulp slurry.
7. The method of claim 6 in which a ratio of sodium borohydride to pulp is from 0.015% to 0.12%.
8. The method of claim 1 further comprising addition of at least one chelant to the pulp slurry.
9. The method of claim 8 in which said ratio is from 4 to 7.5.
10. The method of claim 9 in which the output of the chemical mixer is added to the pulp slurry within 3 hours of mixing.